Service Desk, Help Desk, Call Center

The Potential of AI Innovations

A Point of View White Paper

Closed Loop Lifecycle Planning©
in collaboration with HP, Microsoft, and Intel

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1.0

Management Summary

Technology moves at an extraordinarily rapid pace; technology innovation during the post-pandemic era is no exception. The era of Artificial Intelligence (AI) is now upon us. Investment in research and development dollars is rising at a frantic pace in this technology, as new applications and features are introduced into existing solutions ranging from search engines to chatbots.

AI surrounding us is not a new experience. We have seen the rise in everything from AI-guided surgeries to chat capabilities with our on-line retailers. AI-driven chat is embraced across most industries in the consumer experience.

It should not be a surprise that in this post-pandemic era where end user preferences (hybrid work) and consumer experiences have changed (on-line) that new techniques and strategies to leverage AI have become a topic of interest and passion.

1.1 Objectives of this White Paper

The objectives of this White Paper are to explore the potential, some would say immediate, impact that AI will have on the Help Desk industry. We will discuss the various Help Desk nomenclature in the next section.

According to many IT frameworks and program management disciplines, the Help Desk is the first line of contact for an end user. In many organizations, the Help Desk is the face of IT to the end user. If AI is successful in automating the Help Desk experience, this could represent a fundamental change in the IT infrastructure.

In this White Paper we will discuss the current state of the Help Desk and where the discipline may be heading. Closed Loop Lifecycle Planning© has concluded that - "change by its very nature is unsettling." This will most certainly apply to AI as it is integrated by IT into the Help Desk.

Management Summary

1.2 Operational Definitions

Everything in lifecycle management begins with an operational definition with an objective to assure that everyone is on the same page. Help Desk is known by many names and depending upon the organization there is a wide variance in the definition, so an operational definition is critical.

The Help Desk is known by various names including:

- Help Desk
- Service Desk
- Call Center
- Contact Center

The definition is an important part of both the internal end user experience and support but also for the customers who may share the same infrastructure architecture and resource.
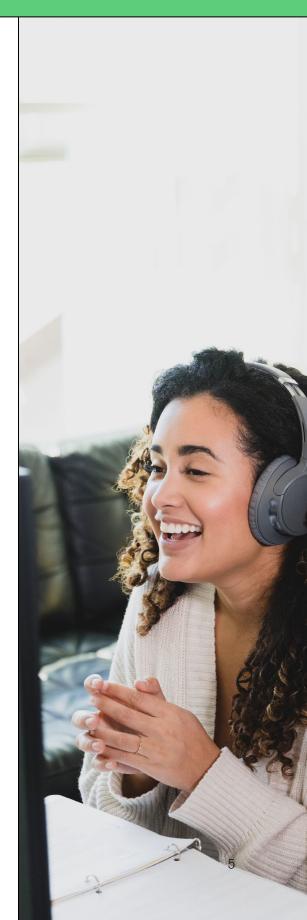
1.2.1 Help Desk

Help Desk is the traditional name of an event and incident resolution support structure. The typical Help Desk focuses on an incident that disrupts the end user experience or a customer who might have encountered a scenario requiring support.

Generally, Help Desk support is remote by chat or phone, not in person (although some organizations do provide this capability).

Help Desks have a series of metrics to deliver based upon pre-set organizational expectations of Help Desk resources. The number of agents and organizational structure depends largely upon call volume, duration, the call mix, and the maturity of the end users or customers.

1.2.2 Service Desk

The Service Desk provides all services that the
Help Desk provides but includes the capability to order
products and services.

For internal IT, the orders could include accessories and
supplies including the scheduling of a replacement of new
or refreshed devices. Service call scheduling is a part of
this Service Center concept as it is all-inclusive for
end users.

The customer or consumer interface provides the single
point of contact for end users. Sometimes there is a name
change from Service Center to other nomenclature (see
the next sections). However, using the term 'service' as
a part of the naming convention does have the impact
of presenting the team as part of the procurement

1.2.3 Call Center

Call Center is one of the more recent naming conventions.
The term Call Center suggests an all-inclusive charter,
"whatever the issue - you can call."

Call Centers provide the ability to scale significantly.
Large organizations have Call Centers with central agents
representing multiple organizations for support.

The Call Center charters focus on any support, question,
feature, or problem that a customer or end user might
have. Oftentimes the end user might need to indicate
whether they are internal or external accounts through a
phone path choice.

Large Call Centers have cost advantages on a cost per call
basis as solutions are replicated across multiple clients.

1.2.4 Contact Center

Call Centers are often referred to as Contact Centers and most of the time these terms are used interchangeably. The term Contact Center suggests that this organization is the first line of support for issues. Often the IVR has multiple questions that need to be answered before support can be engaged. This, by the way, can be true in all of the aforementioned models.

1.2.5 Telemarketing

Call Centers and Contact Centers are often leveraged for telemarketing activities. If telemarketing is the objective of this infrastructure, it is not a Help Desk nor Service Center but a sales vehicle. A similar IT infrastructure is often leveraged for Outbound telemarketing and is similar to IT infrastructure used for incident and problem-based solutions.

Robo calls are an example of this cross-over between Call Centers and Telemarketing.

There is a point where these agendas should not be co-mingled, so end users and consumers do not get frustrated or confused by the charters.

2.0

The Organizational Model

The staffing of the Help Desk can be delivered internally, externally, or in a hybrid mode. Internally simply means that the Help Desk agents, or full-time equivalents (FTE), are employed by the organization. This is the insource model.

Externally means that the resources providing the support are not FTEs of the organization, but a third-party provider. The hybrid model provides a mix of both internal and external resources.

The structure of Help Desk support is defined by resources organized by levels. Level 1 engages the initial call which is anticipated to be resolved in a range of 70% to 80% of the time. Level 2 represents the escalation of the 20% to 30% not resolved on the initial call. Level 3 is the escalation forwarded to system or technical resources to address specific problems that are more complex or infrequent.

Many organizations employ an outsourcing or staff augmentation model for Level 1, retaining escalation resources in house where more internal knowledge might be required.

After-hours support may be deployed to cover end users working in other time zones or when shopping occurs. In these instances, many organizations prefer to outsource the off-hours operation.

The hybrid mode is a combination often referred to as out-tasking or selective outsourcing.

The reason it is important to establish dialog on service delivery strategies is that resources incur costs associated with infrastructure, regardless of which organization delivers the resources and solves the issues.

2.1 The Cost of the Help Desk

The cost of the Help Desk can be variable whether internally or externally delivered. Costs can be a fixed cost based upon headcount required to deliver and cover the call volume. There could be a baseline cost predicated upon a determined volume plus incremental costs based upon variation in volumes.

Another method of determining costs is based on the cost per call. In this instance, resource costs are calculated on a per event basis.

Help Desk metrics (which are covered in the next section) can inform costs as well. The first call resolution rate or escalation percentages are examples of Key Performance Indicators (KPIs) which are elements of the metrics.

Every organization regardless of the service delivery strategy should know, and most may or may not know, the fully loaded cost per call. In some cases, the costs are not fully reflected so care needs to be taken in comparing alternatives.

2.2 Enter AI

It is not an error that the first mention of AI for Help Desk is right after a cost discussion. Organizations have been trying for years (perhaps decades) to continually improve the cost of the Help Desk. Most organizations have the experience of knowing that in most cases there is little more that can be done to further drive out costs, unless there is a step change.

Closed Loop Lifecycle Planning© defines a step change as "a significant improvement usually through automation and innovation that reduces the cost to deliver by at least 20%."

As illustrated in the following section regarding the Top Help Desk Calls, many topics of calls have a common theme or issue and are repetitive for agents. Over the years, Help Desks have built up knowledge bases and scripts to address these commodity types of calls. The slogan "wash-rinse-repeat" is clearly at play.

In addition, organizations have been working to embrace self-enablement tools for end user engagement. The outcomes of these efforts have been met with a variation in responses depending upon who is asked.

The cost of the Help Desk call is calculated in a manner that creates a broad range of potential costs with estimates ranging from $6 to $12 per call (depending upon metrics and complexity).

The cost of self-enablement might deliver some cost reductions but is not consistency reliable. Sure, there are chatbots in the beginning phase but those, while effective in consumer and customer environments, remain to be leveraged fully in businesses. Hence, the Help Desk costs remain reasonably consistent year-to -year.

AI could represent the step change for the Help Desk.

Instead of leveraging Help Desk agents (regardless of who is providing the resource), a well trained AI has the ability to provide resolution for the majority of Level 1 Help Desk calls as these call topics are repetitious.

The Organizational Model

Now imagine, or anticipate, that a Level 1 Help Desk call is handled as an AI event. The AI tool is knowledgeable of the Top Calls within an organization. In this scenario first call resolution rates and other metrics would likely be comparable.

One of the key reasons that self-enablement has not been fully successful in driving out costs nor have chatbots been fully effective, is that the organizations did not exit a lifecycle element. Rather, the agent-driven Help Desk remained an option for the customers and end users.

AI will be the enabler to exit the agent-driven lifecycle element in Help Desk should the organization adopt that strategy and fully embrace it.

From a cost perspective it is "easy" to visualize that the adoption of an AI tool in a Level 1 Help Desk scenario is a game changer. It is important to consider development costs which are often in the R&D budgets, not IT. However, the ongoing cost to deliver the service would be insignificant compared to the current model.

Outsourcing and out-tasking businesses would embrace this approach as a component of a continuous process improvement plan to reduce the cost to deliver Help Desk year to year.

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2.3 Unintended Consequences

Closed Loop Lifecycle Planning[©] concluded, "there are no right or wrong answers, only conscious and unconscious decisions."

There is a concern that this AI automation will reduce agent head count requirements. There is now an opportunity to redeploy resources for more meaningful impact. One option may deploy Level 1 resources to a Level 2 scenario with training.

Also, within IT there would remain positions, such as line of business liaisons, which would leverage the intimate knowledge of the organization and its end user communities.

Human Resources should be an active participant in such automation activities so that the consequences are not unintended. Resource shifts driven by the implementation of AI tools should be anticipated and planned with regards to the agents and the end user experience.

For the end user communities, training and expectations will be key. For the agents, training and re-designing the position will be required.

3.0

Top KPIs

At this point in this White Paper, it would be of interest to identify and provide the implications of the typical Top Calls handled by the Help Desk and assess how AI can facilitate improvement. The improvement comes not only from cost, but a more rapid time to resolution.
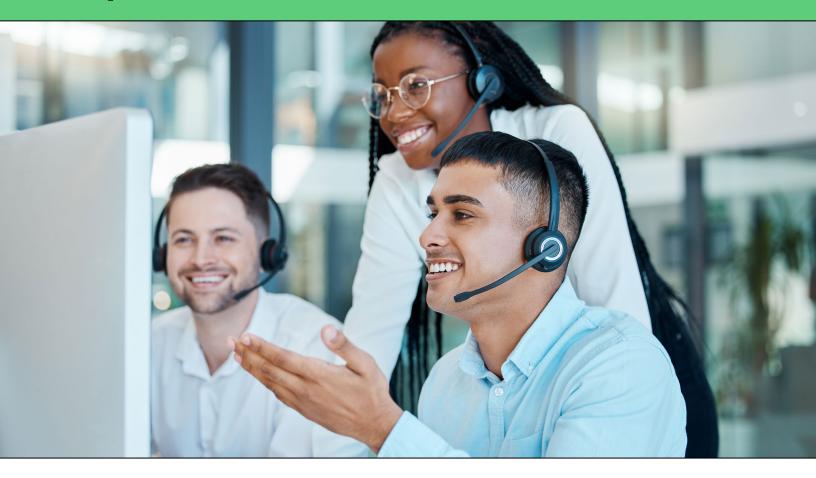
The following table looks at the Top Metrics (KPIs) for a typical Help Desk and provides commentary regarding the role that AI could play.

Table 1 Examples of Help Desk Key Performance Indicators (KPI)

Description	Current	AI
First Call Resolution Rate	70% to 80%	Likely existing metrics met or exceeded with AI
Call Volume	Status Quo	Likely volume remains steady
Abandon Rate	2% to 5%	Likely low abandon rate with automation with AI
Call Duration (Handle Time)	2 to 7 Minutes	Reduced time duration
Rings Before Pick Up	4 to 5 rings	Immediate response
Wait Time	2 to 5 minutes	None
Integration Into Self-Service	May (not) be integrated	Designed into API
Creation of Level 2 Ticket	Require agent creation	Automated
Cost per transaction	$5 to $7	Least cost range >$2 (assumption based upon self-service)
Repeat topics/trends	Requires analytics	Real time trending

Top KPIs

To summarize the top KPIs - from a service level perspective and cost perspective, embracing AI as a part of the Help Desk solution could favorably impact all KPIs identified and provide a faster turnaround time for answers.

For some time now, exiting certain lifecycle operations has been a desirable outcome. Leveraging AI initially on the most commodity of calls is an approach to be considered. In the consumer marketplace, the pandemic accelerated the role of AI in the interface with the customers. Now the timing is optimal to internalize that proven approach in an organization.

4.0

Top Calls

Over many years, the top calls to the Help Desk have remained unchanged. When reviewing on a year-to-year basis, there is often a lag time for change based upon the adoption of newer technologies. The changing demographics in many organizations combined with the impetus for cost reductions will likely drive AI adoption in the post-pandemic era.

While there would be start-up costs to design and build tools, the drive to AI will have a very favorable ROI for organizations in the Help Desk lifecycle element over time.

In this section, we will explore briefly the typical top Help Desk calls with an aim to understand if AI will change the dynamics. Specifically, the following brief list has been identified in engagements directly with organizations and Closed Loop Lifecycle Planning© research.

- Password Reset
- "How To" Questions
- Application Questions
- Network Access
- Blue Screen

- Device and Application Performance
- Hardware
- Service Requests
- Collaboration
- Commodity Calls

4.1 Password Reset

Password reset has been one of the top, if not the top, call topic to the Help Desk over the years. All industries, public and private sector, have automated password reset tools and, in some cases, single sign-on tools. Organizations have been for years trying to adopt end user self-enablement for resetting passwords or reducing dependencies on passwords through the implementation of multi-factor authentication.

Many organizations, however, have continued to offer password reset as an agent-driven service.

AI could represent that crossover between password reset tools, self-enablement, and automation by aggregating those capabilities into AI.

AI could be the single point of contact to reset passwords, eliminating manual intervention, which enables the organization to exit that lifecycle element.

4.2 "How To" Questions

"How To" questions are end user inquiries surrounding hardware and software features and capabilities. In this respect, AI tools hold a significant potential by representing a "management tool" for this operation which in the past might have required training. By leveraging AI, Help Desk Agents are not required to reference the knowledge base, but rather the AI tool provides access to the answers.

The end user benefits by a potentially deeper and more rapid response, while the organization does not need to further invest in Help Desk agents delivering this service level.

4.3 Application Questions

AI tools may become the vehicle for application providers to provide detailed documentation about a solution. By inputting key words or phrases, the end users could obtain answers to some of the more complicated questions surrounding an application. The Level 1 Help Desk agent would not be involved.

In a sense, leveraging AI in this way is a part of emerging training and navigation strategies embraced by software developers as it is an easy, low-cost model to consider.

4.4 Network Access

Downtime is the enemy of end user productivity. AI tools have the capability to integrate into other programs such as data analytics and network topology to enable resolution of Help Desk incidents. The ability to identify a network problem as the root of why there is no network access provides for a more immediate ability to resolve issues.

AI tools can be the integration point as the aggregator of information before an incident is handed-off to an agent or escalated to a Level 2 resource.

4.5 Blue Screen

Similar to the Network Access discussion above, Blue Screen can have many causes.

AI tools may not be able to perform diagnostics but could create a ticket through the decision tree of the steps to be taken to address the issues. This could save time for the Help Desk to address the root cause.

4.6 Device and Application Performance

Depending upon the role that AI can play, the level of integration into the management tool suite will play a critical role in the value proposition.

When an end user has a performance issue, whether driven by some combination of hardware or application, AI could become a sensing arm that can then provide an interface to analytics tools for root cause and mitigation.

Analytics agents already exist on devices, AI tools can interpret the telemetry and identify a broader issue to be addressed by the IT team.

4.7 Hardware

For most of the Help Desks, the default classification of "Hardware" as one of the top calls is common. Given the reliability of the hardware, it is highly unlikely that the root cause is from the hardware itself. Typically, it is a driver issue, imaging, version, or patching issue. Regardless, the end user has an incident to be addressed.

AI can play a role in assessing variables that are predictive so that proactive action can be taken.

4.8 Service Requests

As App Stores become more prominent in modern management, AI could play a role by advising on the most current versions required and potentially applications based upon the end user profiles.

Service requests can be identified quicker via AI than a formal request conveyed to the App Store based upon the decision tree for authorization and requirements. This represents a potentially more automated AI solutions for workflows of the future.

4.9 Collaboration

With the hybrid model, multiple-location, global and even the day-to-day experience, collaboration represents table stakes. AI can assess if there are performance issues such as lag time or compliance to specifications for performance (including peripherals). AI tools can be the source that end users leverage for a deeper understanding for root causes.

4.10 Commodity Calls

This top call is somewhat of a "catch all" for AI for the Help Desk. Regardless of the source or inquiry, AI can be the first line of defense for any Level 1 call considered a commodity call. A request or incident can be anticipated, and content and responses created based on analysis of this grouping of calls.

4.11 Summary of Calls

The objective of this section was not to provide an extraordinarily high level of detail, but rather identify examples where AI tools implemented in the Help Desk discipline could be the future technology to drive continuous process improvement.

This improvement will be derived from:

- Handling first contact and calls previously requiring an agent
- Drive end user self-enablement
- Integrate with analytics and improve resolution times
- Create second-level tickets for follow up
- Accelerate touchless calls for password reset

The point of the conversation is that a very comprehensive business case can identify economic benefits for AI technology in the Help Desk. The business case should include all requirements for integration into other decision support solutions in place or contemplated.

5.0

The
Trade-Offs

Leveraging AI as the first potential contact for end users changes the context of the Help Desk agent. The personal connection that agents provide with end users is not a change to be taken lightly without considerations. The personal connection with an agent is lost when AI is leveraged.

This is potentially an area where the changing demographics comes into play. Millennials and GenZ will be quite familiar with AI tools and automated processes having grown up with technology. In many cases, this generation of end users would rather not chat with a Help Desk agent. This cohort maintains the perception that they may be as knowledgeable as the agent themselves.

The GenX, Traditionalists, and Baby Boomers should not be dismissed though, since all generations experienced the pandemic in which online became the norm for consumers.

The trade-offs of implementing AI tools will include allocation and prioritization of funding to determine how aggressive an organization will be to embrace the AI trend.

In this White Paper, we have exclusively focused on optimization of the Help Desk. There are other lifecycle disciplines to be addressed as well.

Appendix

1. Closed Loop Lifecycle Planning© - A Complete Guide to Managing Your PC Fleet, by Bruce Michelson, published by Addison-Wesley, Division of Pearson Education, ISBN 978-0-321-47714-9, Includes separate eBook by Safari on user segmentation.

2. IT Strategies in the Post-Pandemic Era, Part of the Closed Loop Lifecycle Planning© Series, by Bruce Michelson, published by Archway Publishing, Division of Simon and Schuster, ISBN 978-1-6657-3856-9, 206 pages.

3. Closed Loop Lifecycle Planning© - Client Computing in the Health Care Industry, by Bruce Michelson, published by IDG, ISBN 978-1-61623-045-6.

4. The Ready State©, copyright TXU002285635, by Bruce Michelson, May 6, 2020.

5. We Are All Retail, The Race to Improve the Retail Experience in A Post Covid World, by Bruce Michelson, and Leif Olson, published by Archway Publishing, Division of Simon and Schuster, ISBN 978-1-6657-3394-6, 165 pages.

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